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U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

ATTORNEY'S DOCKET NUMBER

P19945

TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A FILING UNDER 35 U.S.C. 371

U.S. APPLICATION NO. (If known, see 37 CFR 1.5)

09/622904

INTERNATIONAL APPLICATION NO.

PCT/KR99/00100

INTERNATIONAL FILING DATE

4 March 1999

PRIORITY DATE CLAIMED

5 March 1998

TITLE OF INVENTION

THEFT PREVENTION DEVICE FOR INFORMATION-STORED DISK

APPLICANT(S) FOR DO/EO/US

Jae Yeon AHN

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information.

1. ☐ This is a FIRST submission of items concerning a filing under 35 U.S.C. 371.
2. ☒ This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371.
3. ☐ This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).
4. ☐ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☐ A copy of the International Application as filed (35 U.S.C. 371(C)(2))
 - a. ☐ is transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☐ has been transmitted by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☐ A Translation of the International Application into English (35 U.S.C. 371 (c)(2)).
7. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
 - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☐ have been transmitted by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☐ have not been made and will not be made.
8. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3))
9. ☐ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☐ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (U.S.C. 371(c)(5)).

Items 11. to 16. below concern other document(s) or information included:

11. ☐ An information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☐ A FIRST preliminary amendment.
☐ A SECOND or SUBSEQUENT preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☒ Other items or information:
 - Cover Letter.
 - Verified Statement (Declaration) Claiming Small Entity Status (37 CFR 1.9 (f) and 1.27 (b)).
 - Copy of Form PCT/DO/EO/905

U.S. APPLICATION NO. (If known, see 37

09/622,904

INTERNATIONAL APPLICATION NO.

PCT/KR99/00100

ATTORNEY'S DOCKET NUMBER

PT9945

17. X The following fees are submitted:

Basic National Fee (37 CFR 1.492(a)(1)-(5)):

Search report has been prepared by the EPO or JPO. \$ 840.00

International preliminary examination fee paid to USPTO (37 CFR 1.482). \$ 670.00

No international preliminary examination fee paid to USPTO (37 CFR 1.482) but
international search fee paid to USPTO(37 CFR 1.445(a)(2)) \$ 760.00Neither international preliminary examination fee (37 CFR 1.482) nor
international search fee (37 CFR 1.445(a)(2)) paid to USPTO. \$ 970.00International preliminary examination fee paid to USPTO (37 CFR 1.482) and all
claims satisfied provisions of PCT Article 33(2)-(4). \$ 96.00

CALCULATIONS

PTO USE ONLY

ENTER APPROPRIATE BASIC FEE AMOUNT =

\$ 0.00

Surcharge of \$130.00 for furnishing the oath or declaration later than 20 30
months from the earliest claimed priority date (37 CFR 1.492(e)).

\$130.00

Claims

Number Filed

Number Extra

RATE

Total Claims

14

- 20 =

0

X \$18.00

\$ 0.00

Independent Claims

4

- 4 =

0

X \$80.00

\$ 0.00

Multiple dependent claim(s) (if applicable)

+ \$270.00

\$ 0.00

TOTAL OF ABOVE CALCULATIONS =

\$130.00

Reduction by 1/2 for filing by small entity, if applicable. Verified Small Entity Statement must also
be filed. (Note 37 CFR 1.9, 1.27, 1.28)

\$ 65.00

SUBTOTAL =

\$ 65.00

Processing fee of \$130.00 for furnishing the English translation later than 20 30
months from the earliest claimed priority date (37 CFR 1.492(f)).

+

\$ 0.00

Extension of Time fee in the amount of \$

+

\$ 0.00

TOTAL NATIONAL FEE =

\$ 65.00

Fee for recording the enclosed assignment (37 CFR 1.21(h). The assignment must be
accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property

+

\$ 0.00

TOTAL FEES ENCLOSED =

\$ 65.00

Amount to be
refunded

\$

Charged

\$

a. X A check in the amount of \$65.00 to cover the above fees is enclosed.b. Please charge my Deposit Account No. in the amount of \$ to cover the above fees.c. X The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to
Deposit Account No. 19-0089.NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and
granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

Bruce H. Bernstein
GREENBLUM & BERNSTEIN, P.L.C.
1941 Roland Clarke Place
Reston, VA 20191
(703) 716-1191

SIGNATURE

Bruce H. Bernstein

NAME

29,027

REGISTRATION NUMBER

P19945.P04

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Jae Yeon AHN

Serial No : 09/622,904
(National Stage of PCT/KR99/00100)

Application Division

I.A.Filed : March 4, 1999

For : THEFT PREVENTION DEVICE FOR INFORMATION-STORED DISK

COVER LETTER

Commissioner of Patents and Trademarks
Washington, D.C. 20231


Sir:

In order to comply with the requirements for the submission of an executed declaration of the International Application set forth in the Notification mailed October 18, 2000 which sets a one month period of response until November 20, 2000 (being that November 18, 2000 falls on a Saturday), Applicants hereby submit:

- Transmittal Letter to the United States Designated/Elected Office Concerning a Filing Under 35 U.S.C. 371
- an executed Declaration and Power of Attorney.
- an executed Verified Statement (Declaration) Claiming Small Entity Status (37 CFR 1.9 (f) and 1.27 (b)).
- a check in the amount of \$65.00 as payment of the surcharge for late filing of the declaration.

The Commissioner is hereby authorized to charge any additional fee, or credit any overpayment to Deposit Account No. 19-0089.

Respectfully submitted,
Jae Yeon AHN

 Reg. No. 33,329
Bruce H. Bernstein
Reg. No. 29,027

October 20, 2000
GREENBLUM & BERNSTEIN, P.L.C.
1941 Roland Clarke Place
Reston, VA 20191
(703) 716-1191

P19945.A01

09/622904/1501
526 Rec'd PCT/PTO 05 SEP 2000
P.H.
J/A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Jae Yeon AHN

Serial No : Not Yet Assigned (National Stage of PCT/KR99/00100)

Filed : Concurrently Herewith

For : THEFT PREVENTION DEVICE FOR INFORMATION-STORED DISK

PRELIMINARY AMENDMENT

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Sir:

Prior to calculation of the filing fees and the examination of the above-identified patent application on the merits, the Examiner is respectfully requested to amend the title, specification, and claims as follows:

IN THE TITLE

Please change the title to ---THEFT PREVENTION DEVICE FOR INFORMATION-STORED DISK---

IN THE SPECIFICATION

Please amend the specification as follows:

Page 6, line 34, change "5" to ---5A---; and

line 37, change "5A" to ---5B---

Page 7, line 10, change "Fig. 9 is a side view" to ---Figs. 9A and 9B are side views---

P19945.A01

IN THE CLAIMS

Please amend claims 4, 10, and 14 as follows:

Claim 4, lines 1 and 2, change delete "2 or 3,".

Claim 10, line 2, delete "or 9".

Claim 14, line 2, delete "12 or 13,".

REMARKS

By the above amendment, claims 4, 10, and 14 have been amended to delete multiple dependency, and the title and specification have been amended to correct errors.

If there should be any questions, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,
Jae Yeon AHN

Leslie H. Bernstein Reg. No. 33,329
Bruce H. Bernstein
Reg. No. 29,027

September 5, 2000
GREENBLUM & BERNSTEIN, P.L.C.
1941 Roland Clarke Place
Reston, VA 20191
(703) 716-1191

12/PKTS

09622901 09/622904
523 Rec'd PCT/PTO 05 SEP 2000

THIEF PREVENTION DEVICE FOR INFORMATION-STORED DISK

Technical Field

5 The present invention relates to a thief prevention device for preventing from a burglary of a data storage disk housed in a storage case; and, more particularly, to the prevention device, wherein a locking and an unlocking devices are equipped within the storage case so that the
10 storage case is unable to be opened unless the unlocking device is used, whereby the burglary can be prevented reliably.

Background Art

15 A case equipped with a simple-designed opening and shutting device, is generally used to prevent a damage of an information storage media, e.g., a video tape, a compact disk, a cassette tape and a floppy disk, from an outside
20 impact, and is used to protect a information storage portion of the disk. Since this case has a structure of easily being opened and shut by anybody, lots of burglary instances are happened, which the disk is pilfered from the storage case in a disk store or a store for lending the disk.
25 Therefore, it is necessary to blockade the burglary as aforementioned, thoroughly.

To prevent the burglary of the information storage media, the conventional storage case having a locking member is proposed. A structure of the conventional storage case
30 is illustrated briefly as referred to Fig. 1.

As described in Fig. 1, the locking member comprises a housing space 32 for housing the disk, housing grooves 33 formed on exterior faces of both ends, a case body 31 in which a guide rail groove 33B is formed on one side of the
35 housing groove 33, a disk holder 36 having a long rail 34 in a lengthwise direction for being inserted into the housing groove 33 and the guide rail groove 33B of the case body 31,

a through hole 33A formed inside the housing groove 33, and a leaf spring 35 disposed inside the rail 34 of the disk holder 36.

Here, a fixed protrusion 34A is formed on one side of the rail 34 and a fixed hole 35B corresponding to the fixed protrusion 34A is formed on the leaf spring 35 for coupling with the fixed protrusion 34A. Two hanger pieces 35A, which are formed by cutting the three adjacent lines of the leaf spring 35 and protruding the cut pieces, has a predetermined distance capable of coupling with the through hole 33A. At this time, the hanger pieces have a structure that a protrusion direction of the hanger pieces 35A is in opposite to the direction that disk holder 36 is inserted into the case body 31. Thus, in case of coupling the guide rail 34 with the housing hole 33 while the data storage disk case is housed in the case body 31, the hanger pieces 35A of the leaf spring 35 is coupled with the through hole 33A so that the disk holder 36 is not separated even if the disk holder 36 is pulled.

Referring to Fig. 2, there is shown a schematic view of an unlocking device to unlock the locking device of the conventional storage case.

As described in Fig. 2, the unlocking device includes a key block 41 in which a first housing groove 41A is formed for housing a width of the data storage disk, and a magnet 42 are mounted in both end sides of the housing groove 41A of the key block 41. Since the key block has a stepped structure which enables for the first housing groove 41A to house a single case or a double case respectively and there is also a second housing groove 41B formed in a bottom portion for housing a tape case, it is possible for unlocking according to the width of the case.

If the storage case is inserted into the key block 41 of the unlocking device as aforementioned, the magnet 42 pulls the leaf spring 35 due to a magnetic force so that the locking is unlocked by separating the hanger pieces 35A from

the through hole 33A.

Mechanisms for locking in and unlocking the disk holder 36 from the case body 31, are illustrated briefly as follows referring to Figs. 3A and 3B.

5 As described in Fig. 3A, since the hanger pieces 35A of the leaf spring 35 are coupled with the through hole 33 of the case body 31, the disk holder 36 is locked not being separated even if it is pulled or pushed.

10 However, if the case is inserted into the first housing groove 41A of the key block 41 as described in Fig. 3B, the hanger pieces 35A of the leaf spring 35 are separated from the through hole 33A of the housing groove 33 because the leaf spring is pulled by the magnetic force of the magnet 42. In this state, a user pulls the case body 31 for unlocking
15 the case on gripping the disk holder 36.

As mentioned already, the conventional burglarproof apparatus has the locking and unlocking devices of which the structure has the hanger pieces 35A of the leaf spring 35 made by being cut and protruded. And the hanger pieces 35A
20 are coupled with the through hole of the housing groove in a locking state and separated from the hole in unlocking state. That is, the fixed hole 35B, which is formed on one side of the leaf spring 35, is fixed by being inserted into the fixed protrusion of the guide rail 34 and the hanger pieces
25 35A on the other side of the leaf spring 35 are disposed at a predetermined distance from an inner side of the leaf spring 35. Hence, there are instances to be happened occasionally that the hanger pieces 35A of the leaf spring 35 are broken and bended backward in case of pulling the
30 case body from the disk holder with a compulsive force.

Therefore, if the hanger pieces 35A are not completely separated from the through hole 33A by the magnetic force of the magnet 12 in detaching the disk holder 6 from the case body 1, the hanger pieces 35A are bended backward or the
35 leaf spring 35 itself is bended backward by the force which the user pulls the case body from the disk holder. Thus, a

moveable space is reduced and the locking function of the hanger pieces is lost so that the unlocking function cannot operate, eventually.

Moreover, when the locking device is intended to be
5 unlocked, the user pulls the case body with one hand on gripping the disk holder with the other hand so that it is difficult for the user to open and shut the case body. There is also a drawback that the locking device is easily unlocked by twisting a cover owing to a weak reinforcement
10 force, which the guide rail groove of the case body surrounds only the upper portion of the rail of the disk holder.

Disclosure of Invention

15 It is, therefore, an object of the present invention to provide a burglarproof apparatus for a data storage disk, wherein a locking and an unlocking is operated without a miss so that the locking and the unlocking operation are
20 reliable, by forming a through hole on a leaf spring and adopting a locking device of which a structure has hanger pieces therein.

In accordance with an embodiment of the present invention, there is provided a burglarproof apparatus for a
25 data storage disk, comprising: a case body wherein a housing space is formed for the data storage disk and a lock groove is formed on both outer sides thereof; a disk holder including a plurality of guide rails for being inserted into the lock groove of the case body, formed on both inner side
30 thereof, for supporting and housing a width of the data storage disk; and a locking means for controlling to combine the disk holder into the case body, including a hanger piece of a protrusion disposed on an inner face of the lock groove, and a leaf spring disposed between guide rails of the disk
35 holder for locking the hanger piece in a through hole.

In accordance with another embodiment of the present

invention, there is provided a burglarproof apparatus for a data storage disk, having a case body forming a housing space therein, a disk holder for supporting and housing a width of the data storage disk, and a storage case equipped with a locking means for controlling to combine the disk holder into the case body, comprising: a key block in which a housing groove is formed, for a width of the disk holder being inserted; a magnet, disposed in both sides of the housing groove of the key block corresponding to the width of the disk holder, for unlocking by supplying a pulling force to the locking means when the disk holder is inserted; and an unlocking pin, formed in a shape of a protrusion, disposed on a front face of the housing groove of the key block having the direction that the disk holder is inserted, for supporting the case body when the case body is separated from the disk holder being pressed by an external force.

In accordance with further another embodiment of the present invention, there is provided a burglarproof apparatus for a data storage disk, comprising: a case body in which a housing space is formed, guide rails are formed on one side of both parts and a lock groove formed on the both faces of the guide rails; a disk holder in which rail grooves are formed on both sides corresponding to the guide rails for coupling the case body and a plurality of slots formed on one side of inside the guide rails; and a locking means for controlling to combine the disk holder into the case body, including a first combination piece formed inside the lock groove and a second combination piece formed inside the rail groove for being attached on and detached from the first hanger piece.

In accordance with still another embodiment of the present invention, there is provided a burglarproof apparatus for data storage disk, comprising: a case body in which a housing space is formed, guide rails are formed on parts of both sides thereof and a lock groove formed on the both faces of the guide rails; a disk holder in which rail

grooves are formed on both sides corresponding to the guide rails for coupling the case body and a plurality of slots formed on one side of inside the guide rails; a locking means for controlling to combine the disk holder into the case body, including a hanger protrusion formed inside the lock groove one side thereof and a leaf spring formed inside the rail groove for being attached on and detached from the first hanger piece on another side thereof; a key block including a housing groove of a width of the disk holder being inserted; a magnet, disposed in both sides of the housing groove of the key block corresponding to the width of the disk holder, for unlocking by supplying a pulling force to the locking means when the disk holder is inserted; and a supporting means for supporting the case body when the case body is separated from the disk holder being pressed by an external force.

Brief Description of the Drawings

Other objects and aspects of the invention will become apparent from the following description of the embodiments with reference to the accompanying drawings, in which:

Fig. 1 is a perspective view showing a structure of a conventional burglarproof case for a data storage disk;

Fig. 2 is a perspective view showing a structure of an unlocking device of the conventional burglarproof case for a data storage disk;

Figs. 3A and 3B are cross-sectional views showing an unlocking operation state of the unlocking device of the conventional art;

Fig. 4 is a perspective view showing a structure of a burglarproof case for a data storage disk in accordance with a preferred embodiment of the present invention;

Fig. ^{5A}~~5~~ is a perspective view showing a combination state of a locking device, which is essential to the present invention; ^{5B}

Fig. ^{5A}~~5A~~ is a perspective view in a different angle

showing a lock groove formed on a case body;

Fig. 6 is a cross-sectional view showing a combination of the lock groove and a guide rail of a disk holder;

Fig. 7 is a perspective view showing the structure of the locking device of the burglarproof case for the data storage disk of the present invention;

Figs. 8A and 8B are a front view and a ground view respectively showing a locking operation state of the locking device which is essential to the present invention;

Fig. 9A and 9B are side views
 Fig. 9 is a side view showing an unlocking operation state of the locking device, which is essential to the present invention;

Figs. 10 is a cross-sectional view showing another embodiment with same function as an unlocking pin, which is essential to the present invention;

Figs. 11 is a perspective view showing the burglarproof case for the data storage disk in accordance with another preferred embodiment of the present invention; and

Fig. 12 is a perspective view showing a combination state of the case body and the locking device of the present invention.

Best Mode for Carrying out the Invention

A burglarproof apparatus for a data storage disk in accordance with the present invention, is implemented that a storage case is not opened without a special unlocking device and is unlocked easily by one touch type in unlocking. The apparatus of an embodiment comprises a storage case 101 equipped with a locking device and an unlocking device 102 for unlocking the locking device.

As described in Fig. 4, the storage case 101 equipped with the locking device, comprises a housing space 2 for the data storage disk, a case body 1 in which a lock groove 3 is formed on one side of both ends of the case in a lengthwise direction, a cover 4 for supporting and housing a thickness

of the data storage disk, a disk holder 6 including a guide rail 5 having a long protrusion in lengthwise direction formed on one side of both ends of the cover 4, for being inserted into the lock groove 3 of the case body 1, and a locking means for controlling a coupling of a disk holder 6 and the case body 1.

Here, the guide rail 5 of the disk holder 6 includes a pair of dovetails 5A, which are protruded in an acute angle, and an standing piece 5B extended to an upper and lower parts of the dovetails 5A on one part of the dovetails 5A. Similarly, the housing groove of the case body has a dovetail groove and a standing guide groove, which are correspondent to the dovetails 5A and the standing piece 5B, respectively.

As described in Figs. 5A and 5B, the locking means includes a hanger protrusion 7 mounted on inner face of the lock groove 2, a leaf spring 8 in which a through hole 8A is formed between guide rails 5 of the disk holder 6 for the hanger protrusion 7 being coupled therewith.

In accordance with the preferred embodiment, the hanger protrusion 7 has a shape of a right triangle and is protruded in a direction that the disk holder 6 is inserted into the case body 1. And the leaf spring 8 includes an embossing 8B for being attached ultrasonically with an inner face of the guide rail 5, formed on one side thereof and a bended piece 8C for being separated from the inner face of the guide rail 5, formed on the other side thereof. Thus, as referred to Fig. 7, in case of coupling the disk holder 6 with the case body 1, a face of the bended piece 8C of the leaf spring 8 slides along a slope of the hanger protrusion 7 shaped as the right triangle smoothly. After this, the hanger protrusion 7 is inserted into the through hole 8A of the leaf spring 8 and then coupled so that the case becomes locked.

Furthermore, in accordance with the embodiment, the case body 1 has a sunken portion formed in the middle of

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both outer faces thereof so that an amount of a used material can be reduced.

Referring to Fig. 7, there is an unlocking device to unlock the locking device of the case having the structure
5 aforementioned.

As described in this figure, the unlocking device comprises a key block 11 having a housing groove on one side thereof, for housing a width of the disk holder 6, and a magnet 12, disposed on both sides of housing grooves of the
10 key block 11, for unlocking by separating the hanger protrusion 7 from the through hole 8A by supplying a magnetic force to the leaf spring 8 formed on inner face of the guide rail 5.

The key block 11 of the embodiment has a first and a
15 second stepped housing grooves 11A, 11B for housing a single or double case on an upper side thereof, and a third housing groove 11C for housing a width of a tape case in a bottom portion. Here, the single case is to house one disk and the double case is two, wherein the single case is inserted into
20 the first housing groove 11A and the double case into the second one 11B.

Additionally, there is an unlocking pin 13 for supporting the case body 1 when the case body 1 is separated from the disk holder 6 being pressed by an external force,
25 formed in a shape of a protrusion on both front sides of the housing groove of the key block 11. At this time, there is a guide hole 6A on both rear sides of the disk holder 6 for the unlocking pin 13 penetrating therethrough.

Therefore, in case that the storage case in which the
30 case body 1 and the disk holder 6 are locked by the locking means, is inserted into the second housing groove 11B of the key block 11, the leaf spring 8 is pulled by a magnetic force of the magnet 12 and at the same time, the unlocking pin 13 is inserted into the guide hole 6A of the disk holder
35 6 so that the unlocking pin is in contact with a face of the case body 1 and the case body 1 can be come out of the disk

holder 6.

Besides, referring to Fig. 10, there is provided another embodiment that play a same role of the unlocking pin 13, including a first step 1A formed on a lower part of the case body 1 and a second step 14 formed on the housing groove of the key block 11 facing to the first step 1A. In this figure, there is only a second step 14 on the second housing groove 11B to be matched with the single case, but it is possible to be formed on the first and the second housing grooves. At this time, the size of the second step 14 is designed to be a little larger than the width of the disk holder 6. Hence, if the storage case is inserted into the second housing groove 11B of the key block 11, the first step 1A and the second step 14 is bumped each other so that the case body does not enter anymore. Since the leaf spring 8 is pulled and is unlocked by the magnetic force of the magnet 12, only the disk holder 6 is placed at the second housing groove 11B of the key block 11.

Referring to Figs. 8 and 9, there is a working state of the present invention having a structure as aforementioned.

Referring to Figs. 8A and 8B, there is provided a schematic cross-sectional view of locking state by inserting the disk holder 6 into the lock groove 3 of the case body 1. In these figures, there is shown only the lock groove 3 and the leaf spring 8.

As described in the figures, when the guide rail 5 of the dovetail 5A and the standing piece 5B slides to be fitted with the dovetail groove and the standing piece groove of the lock groove which is formed in the lengthwise direction on both outer faces of the case body 1, the leaf spring 8 mounted on interior of the dovetail 5A slides to cross the hanger protrusion 7 having the shape of the right triangle disposed in the lock groove 3. Under this state, by pushing the disk holder to the case body on and on, the hanger protrusion 7 come to be inserted into the through hole 8A of the leaf spring 8, and then is coupled in the end.

At this state, even if the disk holder 6 or the case body 1 is pulled or pushed, the storage case is fixed and is not separated because the perpendicular face of the hanger protrusion 7 is contact with the through hole 8A. Thus, the case body 1 and the disk holder 6 is locked firmly, and moreover, a reinforcement force of a locking part is increased because the dovetail and the standing pieces 5A and 5B of the guide rail 5 are inserted into and covered with the dovetail groove and the standing piece guide groove of the lock groove 3.

Referring to Fig. 9, there is illustrated an unlocking operating state by the locking means under the locking means being operated.

Fig. 9 is a schematic cross-sectional view showing an operating state that the case body 1 is separated from the disk holder 6. As described in this figure, if the storage case in which the locking means operates, is inserted into the housing groove of the key block 11, the unlocking pin 13 is inserted through the guide groove 6A of the disk holder 6 and is reached to the housing groove first. According to this, the magnet 12 pulls the leaf spring 8. At this time, the magnet 12 pulls a portion of the thorough hole 8A of the leaf spring 8 in which the hanger protrusion 7 is inserted, to inside the guide rail 5 so that the locking is unlocked owing to the hanger protrusion 7 being separated from the thorough hole 8A. Then, the case body 1 is bounced up and is come out of disk holder 6 so that it is unnecessary to use a hand for a separation.

Referring to Figs. 11 and 12, there is provided a structure of the locking apparatus of the burglarproof apparatus for the data storage disk in accordance with another preferred embodiment of the present invention. In this embodiment, the case holder is formed to wrap the locking means completely so that the reinforcement force is maximized. Since the others without the locking means are same to the embodiment as aforementioned, an explanation for

the others is abbreviated and only the locking means is illustrated hereinafter.

As described in these figures, a guide rail 23 is formed in a lengthwise direction on both sides of the case body 21 in which a housing space 22 for the data storage disk is formed, and a lock groove 24 is formed on outer face. Additionally, a hanger protrusion 25 has the shape of the right triangle and is protruded in a direction that the disk holder 26 is inserted into the case body 21, formed inside the lock groove 24. A rail groove 26A is formed on both sides of the disk holder 26 corresponding to the guide rail 23 for sliding to couple therewith. A leaf spring 28 is mounted on the inner face of the rail groove 26A wherein a long thorough hole 28A is formed in a lengthwise direction for the hanger protrusion 25 being locked. Here, the leaf spring 28 has a bended piece 28B disposed on an upper and a lower parts thereof as well illustrated in Fig. 11, and a fixed piece 29 is formed in which a slot 29A is formed on the upper and the lower parts of the rail groove 26A, for the bended piece 28B being inserted and fixed.

Therefore, as shown in Fig. 12, when the disk holder 26 is inserted into the case body 21, a face of the leaf spring 28 slides along a slope of the hanger protrusion 25 shaped as the right triangle smoothly, and then the guide rail 23 is inserted into the rail groove 26A. After this, the hanger protrusion 25 is inserted into the through hole 28A of the leaf spring 28 and is coupled so that the case becomes locked.

Unlocking the locking means is same to the explanation of operating state as referred to Fig. 9 so that a detail explanation is abbreviated.

While the present invention has been described with respect to certain preferred embodiments only, other modifications and variation may be made without departing from the spirit and scope of the present invention as set forth in the following claims.

Claims

1. A burglarproof apparatus for a data storage disk, comprising:

5 a case body wherein a housing space is formed in a lengthwise direction for the data storage disk and a lock groove is formed on both outer sides thereof;

a disk holder including a plurality of guide rails for being inserted into the lock groove of the case body, formed
10 on both inner side thereof, for supporting and housing a width of the data storage disk; and

a locking means for controlling an operation of combining the disk holder into the case body, including a hanger protrusion disposed on an inner face of the lock
15 groove, and a leaf spring provided with a thorough hole between guide rails of the disk holder for locking the hanger protrusion in the through hole.

2. The burglarproof apparatus as recited in claim 1,
20 wherein the guide rails of the disk holder includes a pair of dovetails protruded on one side thereof and an extended standing piece on portions of the dovetails, and the lock groove of the case body includes dovetail grooves corresponding to the dovetails and a standing guide groove
25 corresponding to the standing piece.

3. The burglarproof apparatus as recited in claim 1, wherein the hanger protrusion of the locking means has a shape of a right triangle protruded in a direction of
30 inserting disk holder into the case body.

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4. The burglarproof apparatus as recited in claim 1, ~~2~~
~~or 3~~, wherein the leaf spring of the locking means has an embossing for being attached ultrasonically with an inner
35 face of the guide rail, formed on one side thereof, and a bended shape for being separated from the inner face of the

guide rail, formed on the other side thereof.

5 5. The burglarproof apparatus as recited in claim 1, further comprising sunken portions on both sides of the case body.

10 6. A burglarproof apparatus for a data storage disk, having a case body forming a housing space therein, a disk holder for supporting and housing a width of the data storage disk, and a storage case equipped with a locking means for controlling an operation of combining the disk holder into the case body, comprising:

a key block in which a housing groove is formed, for a width of the disk holder being inserted;

15 a magnet, disposed in both sides of the housing groove of the key block corresponding to the width of the disk holder, for unlocking by supplying a pulling force to the locking means when the disk holder is inserted; and

20 an unlocking pin, formed in a shape of a protrusion, disposed on a front face of the housing groove of the key block having the direction that the disk holder is inserted, for supporting the case body when the case body is separated from the disk holder being pressed by an external force.

25 7. The burglarproof apparatus as recited in claim 6, wherein the key block includes a first and a second stepped housing grooves for housing a single or a double cases on an upper part thereof, and a third housing groove for housing a width of a tape case in a bottom portion thereof.

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8. A burglarproof apparatus for a data storage disk, comprising:

35 a case body in which a housing space is formed, guide rails are formed on one side of both parts and a lock groove formed on the both faces of the guide rails in a lengthwise direction;

a disk holder in which rail grooves are formed on both sides corresponding to the guide rails for coupling the case body and a plurality of slots formed on one side of inside the guide rails; and

5 a locking means for controlling an operation combining the disk holder into the case body, including a first combination piece formed inside the lock groove and a second combination piece formed inside the rail groove for being attached on and detached from the first hanger piece.

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9. The burglarproof apparatus as recited in claim 8, wherein the locking means includes the first combination piece formed inside the lock groove in a shape of a hanger protrusion, the second combination piece having a bended
15 piece for being inserted into a fixed piece formed on inner part of the rail groove and a leaf spring formed a thorough hole therein for being coupled with the hanger protrusion.

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20 10. The burglarproof apparatus as recited in claim 8 or 9, wherein the hanger protrusion of the locking means is protruded having a shape of a right triangle in a direction of inserting the disk holder into the case body.

25 11. A burglarproof apparatus for data storage disk, comprising:

a case body in which a housing space is formed, guide rails are formed on parts of both sides thereof and a lock groove formed on the both faces of the guide rails in a lengthwise direction;

30 a disk holder in which rail grooves are formed on both sides corresponding to the guide rails for coupling the case body and a plurality of slots formed on one side of inside the guide rails;

35 a locking means for controlling an operation of combining the disk holder into the case body, including a hanger protrusion formed inside the lock groove one side

thereof and a leaf spring formed inside the rail groove for being attached on and detached from the first hanger piece on another side thereof;

5 a key block including a housing groove of a width of the disk holder being inserted;

a magnet, disposed in both sides of the housing groove of the key block corresponding to the width of the disk holder, for unlocking by supplying a pulling force to the locking means when the disk holder is inserted; and

10 a supporting means for supporting the case body when the case body is separated from the disk holder being pressed by an external force.

12. The burglarproof apparatus as recited in claim 11,
15 the supporting means includes a first step formed in a lower part of the case body and a second step formed in the housing groove of the key block.

13. The burglarproof apparatus as recited in claim 11,
20 further comprising a guide hole formed on both rear sides of the disk holder for unlocking.

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14. The burglarproof apparatus as recited in claim 11,
~~12 or 13~~, wherein the supporting means disposed on both
25 front sides of the housing groove of the key block in a shape of a protrusion, and includes an unlocking pin penetrating the guide hole of the disk holder in contact with a face of the case body.

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Abstract

The present invention is a burglarproof apparatus of the present invention is implemented, wherein a locking and an unlocking devices are equipped within the storage case so that the storage case is unable to be opened unless the unlocking device is used, whereby the burglary can be prevented reliably. The apparatus includes a case body wherein a housing space is formed for the data storage disk and a lock groove is formed on both outer sides thereof, a disk holder including a plurality of guide rails for being inserted into the lock groove of the case body, formed on both inner side thereof, for supporting and housing a width of the data storage disk, and a locking means for controlling to combine the disk holder into the case body, including a hanger piece of a protrusion disposed on an inner face of the lock groove, and a leaf spring disposed between guide rails of the disk holder for locking the hanger piece in a through hole.

Declaration and Power of Attorney For Utility or Design Patent Application **English Language Declaration**

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

THEFT PREVENTION DEVICE FOR INFORMATION-STORED DISK

the specification of which is attached hereto unless the following box is checked:

☐ was filed on _____ as
 United States Application Number _____
 And was amended on _____ (if applicable) or,
 PCT International Application Number _____
 and was amended on _____ (if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, §1.56.

I hereby claim foreign priority benefits under Title 35, United States Code §119 (a-d) or §365(b) of any foreign application(s) for patent or inventor's certificate, or §365(a) of any PCT international application which designated at least one country other than the United States of America, listed below. I have also identified below, by checking the "No" box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed:

Priority Claimed				
1998-7341	Republic of Korea	05 / 03 / 1998	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(Number)	(Country)	(Day/Month/Year Filed)	Yes	No
1998-26475	Republic of Korea	01 / 07 / 1998	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(Number)	(Country)	(Day/Month/Year Filed)	Yes	No
_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
(Number)	(Country)	(Day/Month/Year Filed)	Yes	No

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_____	_____
(Number)	(Day/Month/Year Filed)
_____	_____
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PCT/KR99/00100
(Application No.)

04/03/1999
(Filing Date)

pending
(Status)
(patented, pending, abandoned)

(Application No.)

(Filing Date)

(Status)
(patented, pending, abandoned)

Additional U.S. or international application numbers are listed on a supplemental priority sheet attached hereto.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

The undersigned hereby authorizes the U.S. attorney or agent named herein to accept and follow instructions from either his foreign patent agent or corporate representative, if any, as to any action to be taken in the Patent and Trademark Office regarding this application without direct communication between the U.S. attorney or agent and the undersigned. In the event of a change in the persons from whom instructions may be taken, the U.S. attorney or agent named herein will be so notified by the undersigned.

POWER OF ATTORNEY: As a named inventor, I hereby appoint the attorney(s) and/or agent(s) associated with the Customer Number provided below to prosecute this application and transact all business in the Patent and Trademark Office connected therewith, and direct that all correspondence be addressed to that Customer Number:

CUSTOMER NUMBER 7055

The appointed attorneys include:

4 Neil F. Greenblum Reg. No. 28,394
Bruce H. Bernstein Reg. No. 29,027

Arnold Turk Reg. No. 33,094
James L. Rowland Reg. No. 32,674

At: Greenblum & Bernstein, P.L.C.
1941 Roland Clarke Place
Reston, VA 20191

Direct Telephone Calls to: Greenblum & Bernstein, P.L.C. (703) 716-1191

Full name of sole or first inventor AHN, JAE-YEON

Inventor's signature [Signature]

Date

18. SEP. 2000

Residence SEOUL, KOREA

KRX

Citizenship REPUBLIC OF KOREA

Post Office Address 475-12, Bangbae2-Dong, Seocho-Ku, Seoul-shi 137-062, Republic of Korea

(Supply similar information and signature for second and subsequent joint inventors.)

Declaration and Power of Attorney For Utility or Design Patent Application English Language Declaration

As a below named inventor, I hereby declare that:

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THEFT PREVENTION DEVICE FOR INFORMATION-STORED DISK

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☒ was filed on March 4, 1999 as

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and was amended on _____ (if applicable) or,

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<u>1998/7341</u>	<u>KOREA</u>	<u>5/March/1998</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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<u>1998/26475</u>	<u>KOREA</u>	<u>1/July/1998</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(Number)	(Country)	(Day/Month/Year Filed)	Yes	No
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(Application No.)

(Filing Date)

(Status)
(patented, pending, abandoned)

(Application No.)

(Filing Date)

(Status)
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The undersigned hereby authorizes the U.S. attorney or agent named herein to accept and follow instructions from either his foreign patent agent or corporate representative, if any, as to any action to be taken in the Patent and Trademark Office regarding this application without direct communication between the U.S. attorney or agent and the undersigned. In the event of a change in the persons from whom instructions may be taken, the U.S. attorney or agent named herein will be so notified by the undersigned.

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The appointed attorneys include:

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Arnold Turk Reg. No. 33,094
James L. Rowland Reg. No. 32,674

Stephen M. Roylance Reg. No. 31,296
Leslie J. Papernier Reg. No. 33,329
William Pieprz Reg. No. 33,630
William E. Lyddane Reg. No. 41,568

At: Greenblum & Bernstein, P.L.C.
1941 Roland Clarke Place
Reston, VA 20191

Direct Telephone Calls to: Greenblum & Bernstein, P.L.C. (703) 716-1191

Full name of sole or first inventor
Jae Yeon AHN

Inventor's signature

Date

Residence
Seoul, Korea

Citizenship
Korea

Post Office Address

(Supply similar information and signature for second and subsequent joint inventors.)

GREENBLUM & BERNSTEIN, P.L.C.
PATENT AND TRADEMARK CAUSES
1941 ROLAND CLARKE PLACE
RESTON, VIRGINIA 20191

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Serial or Patent No: _____ Attorney's Docket No.: _____
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VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY
STATUS (37 CFR 1.9 (f) and 1.27(b)) -- INDEPENDENT INVENTOR

As a below named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.9 (c) for purposes of paying reduced fees under section 41 (a) and (b) of Title 35, United States Code, to the Patent and Trademark Office with regard to the invention entitled THEFT PREVENTION DEVICE FOR INFORMATION-STORED DISK

described in

- ☒ the specification filed herewith
☐ application serial no. _____, filed _____
☐ patent no. _____, issued _____

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I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28 (b))

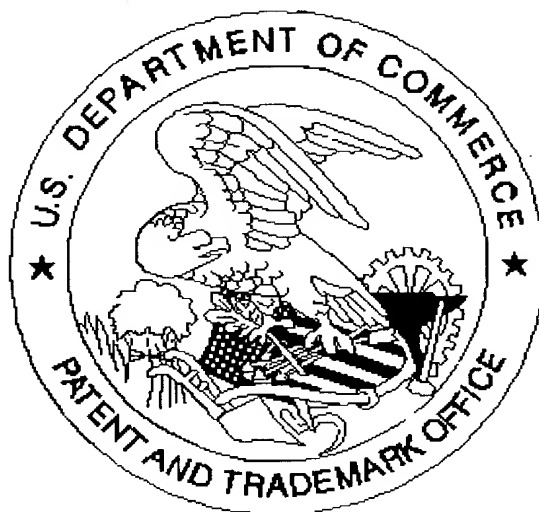
I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

AHN, JAE-YEON
NAME OF INVENTOR _____ NAME OF INVENTOR _____ NAME OF INVENTOR _____

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